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$$A'_0 = |A_{-1}|^2 [Re(T_{-1,-1,-1}^1)Re(T_{-1,-1,-1}^1) + Im(T_{-1,-1,-1}^1)Im(T_{-1,-1,-1}^1)] \\ \omega_0 = 2[(2*1+1)(2*1+1)d_{-1,0}^1 * d_{-1,0}^1 * d_{-1,-1}^1 * d_{-1,-1}^1]$$

$$A'_1 = |A_{-1}|^2 [Re(T_{-1,-1,-1}^1)Re(T_{0,-1,-1}^1) + Im(T_{-1,-1,-1}^1)Im(T_{0,-1,-1}^1)] \\ \omega_1 = [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{-1,1}^1 * d_{-1,-1}^1 * d_{0,-1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [0\phi_\ell + -1\phi_Z])$$

$$A'_2 = |A_{-1}|^2 [Re(T_{-1,-1,-1}^1)Re(T_{-1,-1,0}^0) + Im(T_{-1,-1,-1}^1)Im(T_{-1,-1,0}^0)] \\ \omega_2 = [(2*1+1)(2*0+1)d_{-1,0}^1 * d_{0,0}^0 * d_{-1,-1}^1 * d_{-1,-1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [1\phi_\ell + -1\phi_Z])$$

$$A'_3 = |A_{-1}|^2 [Re(T_{-1,-1,-1}^1)Re(T_{-1,-1,0}^1) + Im(T_{-1,-1,-1}^1)Im(T_{-1,-1,0}^1)] \\ \omega_3 = [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{0,0}^1 * d_{-1,-1}^1 * d_{-1,-1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [1\phi_\ell + -1\phi_Z])$$

$$A'_4 = |A_{-1}|^2 [Re(T_{-1,-1,-1}^1)Re(T_{0,-1,0}^1) + Im(T_{-1,-1,-1}^1)Im(T_{0,-1,0}^1)] \\ \omega_4 = [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{0,1}^1 * d_{-1,-1}^1 * d_{0,-1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [0\phi_\ell + 0\phi_Z])$$

$$A'_5 = |A_{-1}|^2 [Re(T_{-1,-1,-1}^1)Re(T_{-1,-1,1}^1) + Im(T_{-1,-1,-1}^1)Im(T_{-1,-1,1}^1)] \\ \omega_5 = [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{1,0}^1 * d_{-1,-1}^1 * d_{-1,-1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [1\phi_\ell + 0\phi_Z])$$

$$A'_6 = |A_{-1}|^2 [Re(T_{-1,-1,-1}^1)Re(T_{0,-1,1}^1) + Im(T_{-1,-1,-1}^1)Im(T_{0,-1,1}^1)] \\ \omega_6 = [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{1,1}^1 * d_{-1,-1}^1 * d_{0,-1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [0\phi_\ell + 1\phi_Z])$$

$$A'_7 = |A_{-1}|^2 [Re(T_{0,-1,-1}^1)Re(T_{0,-1,-1}^1) + Im(T_{0,-1,-1}^1)Im(T_{0,-1,-1}^1)] \\ \omega_7 = 2[(2*1+1)(2*1+1)d_{-1,1}^1 * d_{-1,1}^1 * d_{0,-1}^1 * d_{0,-1}^1]$$

$$A'_8 = |A_{-1}|^2 [Re(T_{0,-1,-1}^1)Re(T_{-1,-1,0}^0) + Im(T_{0,-1,-1}^1)Im(T_{-1,-1,0}^0)] \\ \omega_8 = [(2*1+1)(2*0+1)d_{-1,1}^1 * d_{0,0}^0 * d_{0,-1}^1 * d_{-1,-1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [1\phi_\ell + -1\phi_Z])$$

$$A'_9 = |A_{-1}|^2 [Re(T_{0,-1,-1}^1)Re(T_{-1,-1,0}^1) + Im(T_{0,-1,-1}^1)Im(T_{-1,-1,0}^1)] \\ \omega_9 = [(2*1+1)(2*1+1)d_{-1,1}^1 * d_{0,0}^1 * d_{0,-1}^1 * d_{-1,-1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [1\phi_\ell + -1\phi_Z])$$

$$A'_{10} = |A_{-1}|^2 [Re(T_{0,-1,-1}^1)Re(T_{0,-1,0}^1) + Im(T_{0,-1,-1}^1)Im(T_{0,-1,0}^1)] \\ \omega_{10} = [(2*1+1)(2*1+1)d_{-1,1}^1 * d_{0,1}^1 * d_{0,-1}^1 * d_{0,-1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [0\phi_\ell + 0\phi_Z])$$

$$A'_{11} = |A_{-1}|^2 [Re(T_{0,-1,-1}^1)Re(T_{-1,-1,1}^1) + Im(T_{0,-1,-1}^1)Im(T_{-1,-1,1}^1)] \\ \omega_{11} = [(2*1+1)(2*1+1)d_{-1,1}^1 * d_{1,0}^1 * d_{0,-1}^1 * d_{-1,-1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [1\phi_\ell + 0\phi_Z])$$

$$A'_{12} = |A_{-1}|^2 [Re(T_{0,-1,-1}^1)Re(T_{0,-1,1}^1) + Im(T_{0,-1,-1}^1)Im(T_{0,-1,1}^1)] \\ \omega_{12} = [(2*1+1)(2*1+1)d_{-1,1}^1 * d_{1,1}^1 * d_{0,-1}^1 * d_{0,-1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [0\phi_\ell + 1\phi_Z])$$

$$\begin{aligned}
A'_{13} &= |A_{-1}|^2 [Re(T_{-1,-1,0}^0)Re(T_{-1,-1,0}^0) + Im(T_{-1,-1,0}^0)Im(T_{-1,-1,0}^0)] \\
\omega_{13} &= 2[(2*0+1)(2*0+1)d_{0,0}^0 * d_{0,0}^0 * d_{-1,-1}^1 * d_{-1,-1}^1] \\
A'_{14} &= |A_{-1}|^2 [Re(T_{-1,-1,0}^0)Re(T_{-1,-1,0}^1) + Im(T_{-1,-1,0}^0)Im(T_{-1,-1,0}^1)] \\
\omega_{14} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{0,0}^1 * d_{-1,-1}^1 * d_{-1,-1}^1] * \cos([1\phi_\ell + -1\phi_Z] - [1\phi_\ell + -1\phi_Z]) \\
A'_{15} &= |A_{-1}|^2 [Re(T_{-1,-1,0}^0)Re(T_{0,-1,0}^1) + Im(T_{-1,-1,0}^0)Im(T_{0,-1,0}^1)] \\
\omega_{15} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{0,1}^1 * d_{-1,-1}^1 * d_{0,-1}^1] * \cos([1\phi_\ell + -1\phi_Z] - [0\phi_\ell + 0\phi_Z]) \\
A'_{16} &= |A_{-1}|^2 [Re(T_{-1,-1,0}^0)Re(T_{-1,-1,1}^1) + Im(T_{-1,-1,0}^0)Im(T_{-1,-1,1}^1)] \\
\omega_{16} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{1,0}^1 * d_{-1,-1}^1 * d_{-1,-1}^1] * \cos([1\phi_\ell + -1\phi_Z] - [1\phi_\ell + 0\phi_Z]) \\
A'_{17} &= |A_{-1}|^2 [Re(T_{-1,-1,0}^0)Re(T_{0,-1,1}^1) + Im(T_{-1,-1,0}^0)Im(T_{0,-1,1}^1)] \\
\omega_{17} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{1,1}^1 * d_{-1,-1}^1 * d_{0,-1}^1] * \cos([1\phi_\ell + -1\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{18} &= |A_{-1}|^2 [Re(T_{-1,-1,0}^1)Re(T_{-1,-1,0}^1) + Im(T_{-1,-1,0}^1)Im(T_{-1,-1,0}^1)] \\
\omega_{18} &= 2[(2*1+1)(2*1+1)d_{0,0}^1 * d_{0,0}^1 * d_{-1,-1}^1 * d_{-1,-1}^1] \\
A'_{19} &= |A_{-1}|^2 [Re(T_{-1,-1,0}^1)Re(T_{0,-1,0}^1) + Im(T_{-1,-1,0}^1)Im(T_{0,-1,0}^1)] \\
\omega_{19} &= [(2*1+1)(2*1+1)d_{0,0}^1 * d_{0,1}^1 * d_{-1,-1}^1 * d_{0,-1}^1] * \cos([1\phi_\ell + -1\phi_Z] - [0\phi_\ell + 0\phi_Z]) \\
A'_{20} &= |A_{-1}|^2 [Re(T_{-1,-1,0}^1)Re(T_{-1,-1,1}^1) + Im(T_{-1,-1,0}^1)Im(T_{-1,-1,1}^1)] \\
\omega_{20} &= [(2*1+1)(2*1+1)d_{0,0}^1 * d_{1,0}^1 * d_{-1,-1}^1 * d_{-1,-1}^1] * \cos([1\phi_\ell + -1\phi_Z] - [1\phi_\ell + 0\phi_Z]) \\
A'_{21} &= |A_{-1}|^2 [Re(T_{-1,-1,0}^1)Re(T_{0,-1,1}^1) + Im(T_{-1,-1,0}^1)Im(T_{0,-1,1}^1)] \\
\omega_{21} &= [(2*1+1)(2*1+1)d_{0,0}^1 * d_{1,1}^1 * d_{-1,-1}^1 * d_{0,-1}^1] * \cos([1\phi_\ell + -1\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{22} &= |A_{-1}|^2 [Re(T_{0,-1,0}^1)Re(T_{0,-1,0}^1) + Im(T_{0,-1,0}^1)Im(T_{0,-1,0}^1)] \\
\omega_{22} &= 2[(2*1+1)(2*1+1)d_{0,1}^1 * d_{0,1}^1 * d_{0,-1}^1 * d_{0,-1}^1] \\
A'_{23} &= |A_{-1}|^2 [Re(T_{0,-1,0}^1)Re(T_{-1,-1,1}^1) + Im(T_{0,-1,0}^1)Im(T_{-1,-1,1}^1)] \\
\omega_{23} &= [(2*1+1)(2*1+1)d_{0,1}^1 * d_{1,0}^1 * d_{0,-1}^1 * d_{-1,-1}^1] * \cos([0\phi_\ell + 0\phi_Z] - [1\phi_\ell + 0\phi_Z]) \\
A'_{24} &= |A_{-1}|^2 [Re(T_{0,-1,0}^1)Re(T_{0,-1,1}^1) + Im(T_{0,-1,0}^1)Im(T_{0,-1,1}^1)] \\
\omega_{24} &= [(2*1+1)(2*1+1)d_{0,1}^1 * d_{1,1}^1 * d_{0,-1}^1 * d_{0,-1}^1] * \cos([0\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{25} &= |A_{-1}|^2 [Re(T_{-1,-1,1}^1)Re(T_{-1,-1,1}^1) + Im(T_{-1,-1,1}^1)Im(T_{-1,-1,1}^1)] \\
\omega_{25} &= 2[(2*1+1)(2*1+1)d_{1,0}^1 * d_{1,0}^1 * d_{-1,-1}^1 * d_{-1,-1}^1] \\
A'_{26} &= |A_{-1}|^2 [Re(T_{-1,-1,1}^1)Re(T_{0,-1,1}^1) + Im(T_{-1,-1,1}^1)Im(T_{0,-1,1}^1)] \\
\omega_{26} &= [(2*1+1)(2*1+1)d_{1,0}^1 * d_{1,1}^1 * d_{-1,-1}^1 * d_{0,-1}^1] * \cos([1\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{27} &= |A_{-1}|^2 [Re(T_{0,-1,1}^1)Re(T_{0,-1,1}^1) + Im(T_{0,-1,1}^1)Im(T_{0,-1,1}^1)] \\
\omega_{27} &= 2[(2*1+1)(2*1+1)d_{1,1}^1 * d_{1,1}^1 * d_{0,-1}^1 * d_{0,-1}^1]
\end{aligned}$$

$$\begin{aligned}
A'_{28} &= |A_1|^2 [Re(T_{-1,-1,-1}^1)Re(T_{-1,-1,-1}^1) + Im(T_{-1,-1,-1}^1)Im(T_{-1,-1,-1}^1)] \\
\omega_{28} &= 2[(2*1+1)(2*1+1)d_{-1,0}^1 * d_{-1,0}^1 * d_{-1,1}^1 * d_{-1,1}^1] \\
A'_{29} &= |A_1|^2 [Re(T_{-1,-1,-1}^1)Re(T_{0,-1,-1}^1) + Im(T_{-1,-1,-1}^1)Im(T_{0,-1,-1}^1)] \\
\omega_{29} &= [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{-1,1}^1 * d_{-1,1}^1 * d_{0,1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [0\phi_\ell + -1\phi_Z]) \\
A'_{30} &= |A_1|^2 [Re(T_{-1,-1,-1}^1)Re(T_{-1,-1,0}^0) + Im(T_{-1,-1,-1}^1)Im(T_{-1,-1,0}^0)] \\
\omega_{30} &= [(2*1+1)(2*0+1)d_{-1,0}^1 * d_{0,0}^0 * d_{-1,1}^1 * d_{-1,1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [1\phi_\ell + -1\phi_Z]) \\
A'_{31} &= |A_1|^2 [Re(T_{-1,-1,-1}^1)Re(T_{-1,-1,0}^1) + Im(T_{-1,-1,-1}^1)Im(T_{-1,-1,0}^1)] \\
\omega_{31} &= [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{0,0}^1 * d_{-1,1}^1 * d_{-1,1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [1\phi_\ell + -1\phi_Z]) \\
A'_{32} &= |A_1|^2 [Re(T_{-1,-1,-1}^1)Re(T_{0,-1,0}^1) + Im(T_{-1,-1,-1}^1)Im(T_{0,-1,0}^1)] \\
\omega_{32} &= [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{0,1}^1 * d_{-1,1}^1 * d_{0,1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [0\phi_\ell + 0\phi_Z]) \\
A'_{33} &= |A_1|^2 [Re(T_{-1,-1,-1}^1)Re(T_{-1,-1,1}^1) + Im(T_{-1,-1,-1}^1)Im(T_{-1,-1,1}^1)] \\
\omega_{33} &= [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{1,0}^1 * d_{-1,1}^1 * d_{-1,1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [1\phi_\ell + 0\phi_Z]) \\
A'_{34} &= |A_1|^2 [Re(T_{-1,-1,-1}^1)Re(T_{0,-1,1}^1) + Im(T_{-1,-1,-1}^1)Im(T_{0,-1,1}^1)] \\
\omega_{34} &= [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{1,1}^1 * d_{-1,1}^1 * d_{0,1}^1] * \cos([1\phi_\ell + -2\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{35} &= |A_1|^2 [Re(T_{0,-1,-1}^1)Re(T_{0,-1,-1}^1) + Im(T_{0,-1,-1}^1)Im(T_{0,-1,-1}^1)] \\
\omega_{35} &= 2[(2*1+1)(2*1+1)d_{-1,1}^1 * d_{-1,1}^1 * d_{0,1}^1 * d_{0,1}^1] \\
A'_{36} &= |A_1|^2 [Re(T_{0,-1,-1}^1)Re(T_{-1,-1,0}^0) + Im(T_{0,-1,-1}^1)Im(T_{-1,-1,0}^0)] \\
\omega_{36} &= [(2*1+1)(2*0+1)d_{-1,1}^1 * d_{0,0}^0 * d_{0,1}^1 * d_{-1,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [1\phi_\ell + -1\phi_Z]) \\
A'_{37} &= |A_1|^2 [Re(T_{0,-1,-1}^1)Re(T_{-1,-1,0}^1) + Im(T_{0,-1,-1}^1)Im(T_{-1,-1,0}^1)] \\
\omega_{37} &= [(2*1+1)(2*1+1)d_{-1,1}^1 * d_{0,0}^1 * d_{0,1}^1 * d_{-1,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [1\phi_\ell + -1\phi_Z]) \\
A'_{38} &= |A_1|^2 [Re(T_{0,-1,-1}^1)Re(T_{0,-1,0}^1) + Im(T_{0,-1,-1}^1)Im(T_{0,-1,0}^1)] \\
\omega_{38} &= [(2*1+1)(2*1+1)d_{-1,1}^1 * d_{0,1}^1 * d_{0,1}^1 * d_{0,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [0\phi_\ell + 0\phi_Z]) \\
A'_{39} &= |A_1|^2 [Re(T_{0,-1,-1}^1)Re(T_{-1,-1,1}^1) + Im(T_{0,-1,-1}^1)Im(T_{-1,-1,1}^1)] \\
\omega_{39} &= [(2*1+1)(2*1+1)d_{-1,1}^1 * d_{1,0}^1 * d_{0,1}^1 * d_{-1,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [1\phi_\ell + 0\phi_Z]) \\
A'_{40} &= |A_1|^2 [Re(T_{0,-1,-1}^1)Re(T_{0,-1,1}^1) + Im(T_{0,-1,-1}^1)Im(T_{0,-1,1}^1)] \\
\omega_{40} &= [(2*1+1)(2*1+1)d_{-1,1}^1 * d_{1,1}^1 * d_{0,1}^1 * d_{0,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{41} &= |A_1|^2 [Re(T_{-1,-1,0}^0)Re(T_{-1,-1,0}^0) + Im(T_{-1,-1,0}^0)Im(T_{-1,-1,0}^0)] \\
\omega_{41} &= 2[(2*0+1)(2*0+1)d_{0,0}^0 * d_{0,0}^0 * d_{-1,1}^1 * d_{-1,1}^1] \\
A'_{42} &= |A_1|^2 [Re(T_{-1,-1,0}^0)Re(T_{-1,-1,0}^1) + Im(T_{-1,-1,0}^0)Im(T_{-1,-1,0}^1)] \\
\omega_{42} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{0,0}^1 * d_{-1,1}^1 * d_{-1,1}^1] * \cos([1\phi_\ell + -1\phi_Z] - [1\phi_\ell + -1\phi_Z])
\end{aligned}$$

$$\begin{aligned}
A'_{43} &= |A_1|^2 [Re(T^0_{-1,-1,0})Re(T^1_{0,-1,0}) + Im(T^0_{-1,-1,0})Im(T^1_{0,-1,0})] \\
\omega_{43} &= [(2*0+1)(2*1+1)d^0_{0,0}*d^1_{0,1}*d^1_{-1,1}*d^1_{0,1}]*\cos([1\phi_\ell + -1\phi_Z] - [0\phi_\ell + 0\phi_Z]) \\
A'_{44} &= |A_1|^2 [Re(T^0_{-1,-1,0})Re(T^1_{-1,-1,1}) + Im(T^0_{-1,-1,0})Im(T^1_{-1,-1,1})] \\
\omega_{44} &= [(2*0+1)(2*1+1)d^0_{0,0}*d^1_{1,0}*d^1_{-1,1}*d^1_{-1,1}]*\cos([1\phi_\ell + -1\phi_Z] - [1\phi_\ell + 0\phi_Z]) \\
A'_{45} &= |A_1|^2 [Re(T^0_{-1,-1,0})Re(T^1_{0,-1,1}) + Im(T^0_{-1,-1,0})Im(T^1_{0,-1,1})] \\
\omega_{45} &= [(2*0+1)(2*1+1)d^0_{0,0}*d^1_{1,1}*d^1_{-1,1}*d^1_{0,1}]*\cos([1\phi_\ell + -1\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{46} &= |A_1|^2 [Re(T^1_{-1,-1,0})Re(T^1_{-1,-1,0}) + Im(T^1_{-1,-1,0})Im(T^1_{-1,-1,0})] \\
\omega_{46} &= 2[(2*1+1)(2*1+1)d^1_{0,0}*d^1_{0,1}*d^1_{-1,1}*d^1_{-1,1}]*\cos([1\phi_\ell + -1\phi_Z] - [0\phi_\ell + 0\phi_Z]) \\
A'_{47} &= |A_1|^2 [Re(T^1_{-1,-1,0})Re(T^1_{0,-1,0}) + Im(T^1_{-1,-1,0})Im(T^1_{0,-1,0})] \\
\omega_{47} &= [(2*1+1)(2*1+1)d^1_{0,0}*d^1_{0,1}*d^1_{-1,1}*d^1_{0,1}]*\cos([1\phi_\ell + -1\phi_Z] - [0\phi_\ell + 0\phi_Z]) \\
A'_{48} &= |A_1|^2 [Re(T^1_{-1,-1,0})Re(T^1_{-1,-1,1}) + Im(T^1_{-1,-1,0})Im(T^1_{-1,-1,1})] \\
\omega_{48} &= [(2*1+1)(2*1+1)d^1_{0,0}*d^1_{1,0}*d^1_{-1,1}*d^1_{-1,1}]*\cos([1\phi_\ell + -1\phi_Z] - [1\phi_\ell + 0\phi_Z]) \\
A'_{49} &= |A_1|^2 [Re(T^1_{-1,-1,0})Re(T^1_{0,-1,1}) + Im(T^1_{-1,-1,0})Im(T^1_{0,-1,1})] \\
\omega_{49} &= [(2*1+1)(2*1+1)d^1_{0,0}*d^1_{1,1}*d^1_{-1,1}*d^1_{0,1}]*\cos([1\phi_\ell + -1\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{50} &= |A_1|^2 [Re(T^1_{0,-1,0})Re(T^1_{0,-1,0}) + Im(T^1_{0,-1,0})Im(T^1_{0,-1,0})] \\
\omega_{50} &= 2[(2*1+1)(2*1+1)d^1_{0,1}*d^1_{0,1}*d^1_{0,1}*d^1_{0,1}]*\cos([0\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{51} &= |A_1|^2 [Re(T^1_{0,-1,0})Re(T^1_{-1,-1,1}) + Im(T^1_{0,-1,0})Im(T^1_{-1,-1,1})] \\
\omega_{51} &= [(2*1+1)(2*1+1)d^1_{0,1}*d^1_{1,0}*d^1_{0,1}*d^1_{-1,1}]*\cos([0\phi_\ell + 0\phi_Z] - [1\phi_\ell + 0\phi_Z]) \\
A'_{52} &= |A_1|^2 [Re(T^1_{0,-1,0})Re(T^1_{0,-1,1}) + Im(T^1_{0,-1,0})Im(T^1_{0,-1,1})] \\
\omega_{52} &= [(2*1+1)(2*1+1)d^1_{0,1}*d^1_{1,1}*d^1_{0,1}*d^1_{0,1}]*\cos([0\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{53} &= |A_1|^2 [Re(T^1_{-1,-1,1})Re(T^1_{-1,-1,1}) + Im(T^1_{-1,-1,1})Im(T^1_{-1,-1,1})] \\
\omega_{53} &= 2[(2*1+1)(2*1+1)d^1_{1,0}*d^1_{1,0}*d^1_{-1,1}*d^1_{-1,1}]*\cos([0\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{54} &= |A_1|^2 [Re(T^1_{-1,-1,1})Re(T^1_{0,-1,1}) + Im(T^1_{-1,-1,1})Im(T^1_{0,-1,1})] \\
\omega_{54} &= [(2*1+1)(2*1+1)d^1_{1,0}*d^1_{1,1}*d^1_{-1,1}*d^1_{0,1}]*\cos([1\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{55} &= |A_1|^2 [Re(T^1_{0,-1,1})Re(T^1_{0,-1,1}) + Im(T^1_{0,-1,1})Im(T^1_{0,-1,1})] \\
\omega_{55} &= 2[(2*1+1)(2*1+1)d^1_{1,1}*d^1_{1,1}*d^1_{0,1}*d^1_{0,1}]*\cos([0\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{56} &= |A_{-1}|^2 [Re(T^1_{0,1,-1})Re(T^1_{0,1,-1}) + Im(T^1_{0,1,-1})Im(T^1_{0,1,-1})] \\
\omega_{56} &= 2[(2*1+1)(2*1+1)d^1_{-1,-1}*d^1_{-1,-1}*d^1_{0,-1}*d^1_{0,-1}]*\cos([0\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{57} &= |A_{-1}|^2 [Re(T^1_{0,1,-1})Re(T^1_{1,1,-1}) + Im(T^1_{0,1,-1})Im(T^1_{1,1,-1})] \\
\omega_{57} &= [(2*1+1)(2*1+1)d^1_{-1,-1}*d^1_{-1,0}*d^1_{0,-1}*d^1_{1,-1}]*\cos([0\phi_\ell + -1\phi_Z] - [-1\phi_\ell + 0\phi_Z])
\end{aligned}$$

$$A'_{58} = |A_{-1}|^2 [Re(T_{0,1,-1}^1)Re(T_{1,1,0}^0) + Im(T_{0,1,-1}^1)Im(T_{1,1,0}^0)] \\ \omega_{58} = [(2*1+1)(2*0+1)d_{-1,-1}^1 * d_{0,0}^0 * d_{0,-1}^1 * d_{1,-1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [-1\phi_\ell + 1\phi_Z])$$

$$A'_{59} = |A_{-1}|^2 [Re(T_{0,1,-1}^1)Re(T_{1,1,0}^0) + Im(T_{0,1,-1}^1)Im(T_{1,1,0}^0)] \\ \omega_{59} = [(2*1+1)(2*1+1)d_{-1,-1}^1 * d_{0,-1}^1 * d_{0,-1}^1 * d_{0,-1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [0\phi_\ell + 0\phi_Z])$$

$$A'_{60} = |A_{-1}|^2 [Re(T_{0,1,-1}^1)Re(T_{1,1,0}^0) + Im(T_{0,1,-1}^1)Im(T_{1,1,0}^0)] \\ \omega_{60} = [(2*1+1)(2*1+1)d_{-1,-1}^1 * d_{0,0}^1 * d_{0,-1}^1 * d_{1,-1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [-1\phi_\ell + 1\phi_Z])$$

$$A'_{61} = |A_{-1}|^2 [Re(T_{0,1,-1}^1)Re(T_{1,1,1}^0) + Im(T_{0,1,-1}^1)Im(T_{1,1,1}^0)] \\ \omega_{61} = [(2*1+1)(2*1+1)d_{-1,-1}^1 * d_{1,-1}^1 * d_{0,-1}^1 * d_{0,-1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [0\phi_\ell + 1\phi_Z])$$

$$A'_{62} = |A_{-1}|^2 [Re(T_{0,1,-1}^1)Re(T_{1,1,1}^0) + Im(T_{0,1,-1}^1)Im(T_{1,1,1}^0)] \\ \omega_{62} = [(2*1+1)(2*1+1)d_{-1,-1}^1 * d_{1,0}^1 * d_{0,-1}^1 * d_{1,-1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [-1\phi_\ell + 2\phi_Z])$$

$$A'_{63} = |A_{-1}|^2 [Re(T_{1,1,-1}^1)Re(T_{1,1,-1}^1) + Im(T_{1,1,-1}^1)Im(T_{1,1,-1}^1)] \\ \omega_{63} = 2[(2*1+1)(2*1+1)d_{-1,0}^1 * d_{-1,0}^1 * d_{1,-1}^1 * d_{1,-1}^1]$$

$$A'_{64} = |A_{-1}|^2 [Re(T_{1,1,-1}^1)Re(T_{1,1,0}^0) + Im(T_{1,1,-1}^1)Im(T_{1,1,0}^0)] \\ \omega_{64} = [(2*1+1)(2*0+1)d_{-1,0}^1 * d_{0,0}^0 * d_{1,-1}^1 * d_{1,-1}^1] * \cos([-1\phi_\ell + 0\phi_Z] - [-1\phi_\ell + 1\phi_Z])$$

$$A'_{65} = |A_{-1}|^2 [Re(T_{1,1,-1}^1)Re(T_{0,1,0}^1) + Im(T_{1,1,-1}^1)Im(T_{0,1,0}^1)] \\ \omega_{65} = [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{0,-1}^1 * d_{1,-1}^1 * d_{0,-1}^1] * \cos([-1\phi_\ell + 0\phi_Z] - [0\phi_\ell + 0\phi_Z])$$

$$A'_{66} = |A_{-1}|^2 [Re(T_{1,1,-1}^1)Re(T_{1,1,0}^0) + Im(T_{1,1,-1}^1)Im(T_{1,1,0}^0)] \\ \omega_{66} = [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{0,0}^1 * d_{1,-1}^1 * d_{1,-1}^1] * \cos([-1\phi_\ell + 0\phi_Z] - [-1\phi_\ell + 1\phi_Z])$$

$$A'_{67} = |A_{-1}|^2 [Re(T_{1,1,-1}^1)Re(T_{0,1,1}^0) + Im(T_{1,1,-1}^1)Im(T_{0,1,1}^0)] \\ \omega_{67} = [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{1,-1}^1 * d_{1,-1}^1 * d_{0,-1}^1] * \cos([-1\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z])$$

$$A'_{68} = |A_{-1}|^2 [Re(T_{1,1,-1}^1)Re(T_{1,1,1}^0) + Im(T_{1,1,-1}^1)Im(T_{1,1,1}^0)] \\ \omega_{68} = [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{1,0}^1 * d_{1,-1}^1 * d_{1,-1}^1] * \cos([-1\phi_\ell + 0\phi_Z] - [-1\phi_\ell + 2\phi_Z])$$

$$A'_{69} = |A_{-1}|^2 [Re(T_{1,1,0}^0)Re(T_{1,1,0}^0) + Im(T_{1,1,0}^0)Im(T_{1,1,0}^0)] \\ \omega_{69} = 2[(2*0+1)(2*0+1)d_{0,0}^0 * d_{0,0}^0 * d_{1,-1}^1 * d_{1,-1}^1]$$

$$A'_{70} = |A_{-1}|^2 [Re(T_{1,1,0}^0)Re(T_{0,1,0}^1) + Im(T_{1,1,0}^0)Im(T_{0,1,0}^1)] \\ \omega_{70} = [(2*0+1)(2*1+1)d_{0,0}^0 * d_{0,-1}^1 * d_{1,-1}^1 * d_{0,-1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [0\phi_\ell + 0\phi_Z])$$

$$A'_{71} = |A_{-1}|^2 [Re(T_{1,1,0}^0)Re(T_{1,1,0}^1) + Im(T_{1,1,0}^0)Im(T_{1,1,0}^1)] \\ \omega_{71} = [(2*0+1)(2*1+1)d_{0,0}^0 * d_{0,0}^1 * d_{1,-1}^1 * d_{1,-1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [-1\phi_\ell + 1\phi_Z])$$

$$\begin{aligned}
A'_{72} &= |A_{-1}|^2 [Re(T_{1,1,0}^0)Re(T_{0,1,1}^1) + Im(T_{1,1,0}^0)Im(T_{0,1,1}^1)] \\
\omega_{72} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{1,-1}^1 * d_{1,-1}^1 * d_{0,-1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{73} &= |A_{-1}|^2 [Re(T_{1,1,0}^0)Re(T_{1,1,1}^1) + Im(T_{1,1,0}^0)Im(T_{1,1,1}^1)] \\
\omega_{73} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{1,0}^1 * d_{1,-1}^1 * d_{1,-1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [-1\phi_\ell + 2\phi_Z]) \\
A'_{74} &= |A_{-1}|^2 [Re(T_{0,1,0}^1)Re(T_{0,1,0}^1) + Im(T_{0,1,0}^1)Im(T_{0,1,0}^1)] \\
\omega_{74} &= 2[(2*1+1)(2*1+1)d_{0,-1}^1 * d_{0,-1}^1 * d_{0,-1}^1 * d_{0,-1}^1] \\
A'_{75} &= |A_{-1}|^2 [Re(T_{0,1,0}^1)Re(T_{1,1,0}^1) + Im(T_{0,1,0}^1)Im(T_{1,1,0}^1)] \\
\omega_{75} &= [(2*1+1)(2*1+1)d_{0,-1}^1 * d_{0,0}^1 * d_{0,-1}^1 * d_{1,-1}^1] * \cos([0\phi_\ell + 0\phi_Z] - [-1\phi_\ell + 1\phi_Z]) \\
A'_{76} &= |A_{-1}|^2 [Re(T_{0,1,0}^1)Re(T_{0,1,1}^1) + Im(T_{0,1,0}^1)Im(T_{0,1,1}^1)] \\
\omega_{76} &= [(2*1+1)(2*1+1)d_{0,-1}^1 * d_{1,-1}^1 * d_{0,-1}^1 * d_{0,-1}^1] * \cos([0\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{77} &= |A_{-1}|^2 [Re(T_{0,1,0}^1)Re(T_{1,1,1}^1) + Im(T_{0,1,0}^1)Im(T_{1,1,1}^1)] \\
\omega_{77} &= [(2*1+1)(2*1+1)d_{0,-1}^1 * d_{1,0}^1 * d_{0,-1}^1 * d_{1,-1}^1] * \cos([0\phi_\ell + 0\phi_Z] - [-1\phi_\ell + 2\phi_Z]) \\
A'_{78} &= |A_{-1}|^2 [Re(T_{1,1,0}^1)Re(T_{1,1,0}^1) + Im(T_{1,1,0}^1)Im(T_{1,1,0}^1)] \\
\omega_{78} &= 2[(2*1+1)(2*1+1)d_{0,0}^1 * d_{0,0}^1 * d_{1,-1}^1 * d_{1,-1}^1] \\
A'_{79} &= |A_{-1}|^2 [Re(T_{1,1,0}^1)Re(T_{0,1,1}^1) + Im(T_{1,1,0}^1)Im(T_{0,1,1}^1)] \\
\omega_{79} &= [(2*1+1)(2*1+1)d_{0,0}^1 * d_{1,-1}^1 * d_{1,-1}^1 * d_{0,-1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{80} &= |A_{-1}|^2 [Re(T_{1,1,0}^1)Re(T_{1,1,1}^1) + Im(T_{1,1,0}^1)Im(T_{1,1,1}^1)] \\
\omega_{80} &= [(2*1+1)(2*1+1)d_{0,0}^1 * d_{1,0}^1 * d_{1,-1}^1 * d_{1,-1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [-1\phi_\ell + 2\phi_Z]) \\
A'_{81} &= |A_{-1}|^2 [Re(T_{0,1,1}^1)Re(T_{0,1,1}^1) + Im(T_{0,1,1}^1)Im(T_{0,1,1}^1)] \\
\omega_{81} &= 2[(2*1+1)(2*1+1)d_{1,-1}^1 * d_{1,-1}^1 * d_{0,-1}^1 * d_{0,-1}^1] \\
A'_{82} &= |A_{-1}|^2 [Re(T_{0,1,1}^1)Re(T_{1,1,1}^1) + Im(T_{0,1,1}^1)Im(T_{1,1,1}^1)] \\
\omega_{82} &= [(2*1+1)(2*1+1)d_{1,-1}^1 * d_{1,0}^1 * d_{0,-1}^1 * d_{1,-1}^1] * \cos([0\phi_\ell + 1\phi_Z] - [-1\phi_\ell + 2\phi_Z]) \\
A'_{83} &= |A_{-1}|^2 [Re(T_{1,1,1}^1)Re(T_{1,1,1}^1) + Im(T_{1,1,1}^1)Im(T_{1,1,1}^1)] \\
\omega_{83} &= 2[(2*1+1)(2*1+1)d_{1,0}^1 * d_{1,-1}^1 * d_{1,-1}^1] \\
A'_{84} &= |A_1|^2 [Re(T_{0,1,-1}^1)Re(T_{0,1,-1}^1) + Im(T_{0,1,-1}^1)Im(T_{0,1,-1}^1)] \\
\omega_{84} &= 2[(2*1+1)(2*1+1)d_{-1,-1}^1 * d_{-1,-1}^1 * d_{0,1}^1 * d_{0,1}^1] \\
A'_{85} &= |A_1|^2 [Re(T_{0,1,-1}^1)Re(T_{1,1,-1}^1) + Im(T_{0,1,-1}^1)Im(T_{1,1,-1}^1)] \\
\omega_{85} &= [(2*1+1)(2*1+1)d_{-1,-1}^1 * d_{-1,0}^1 * d_{0,1}^1 * d_{1,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [-1\phi_\ell + 0\phi_Z]) \\
A'_{86} &= |A_1|^2 [Re(T_{0,1,-1}^1)Re(T_{1,1,0}^0) + Im(T_{0,1,-1}^1)Im(T_{1,1,0}^0)] \\
\omega_{86} &= [(2*1+1)(2*0+1)d_{-1,-1}^0 * d_{0,0}^0 * d_{0,1}^1 * d_{1,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [-1\phi_\ell + 1\phi_Z])
\end{aligned}$$

$$\begin{aligned}
A'_{87} &= |A_1|^2 [Re(T_{0,1,-1}^1)Re(T_{0,1,0}^1) + Im(T_{0,1,-1}^1)Im(T_{0,1,0}^1)] \\
\omega_{87} &= [(2*1+1)(2*1+1)d_{-1,-1}^1 * d_{0,-1}^1 * d_{0,1}^1 * d_{0,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [0\phi_\ell + 0\phi_Z]) \\
A'_{88} &= |A_1|^2 [Re(T_{0,1,-1}^1)Re(T_{1,1,0}^1) + Im(T_{0,1,-1}^1)Im(T_{1,1,0}^1)] \\
\omega_{88} &= [(2*1+1)(2*1+1)d_{-1,-1}^1 * d_{0,0}^1 * d_{0,1}^1 * d_{1,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [-1\phi_\ell + 1\phi_Z]) \\
A'_{89} &= |A_1|^2 [Re(T_{0,1,-1}^1)Re(T_{0,1,1}^1) + Im(T_{0,1,-1}^1)Im(T_{0,1,1}^1)] \\
\omega_{89} &= [(2*1+1)(2*1+1)d_{-1,-1}^1 * d_{1,-1}^1 * d_{0,1}^1 * d_{0,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{90} &= |A_1|^2 [Re(T_{0,1,-1}^1)Re(T_{1,1,1}^1) + Im(T_{0,1,-1}^1)Im(T_{1,1,1}^1)] \\
\omega_{90} &= [(2*1+1)(2*1+1)d_{-1,-1}^1 * d_{1,0}^1 * d_{0,1}^1 * d_{1,1}^1] * \cos([0\phi_\ell + -1\phi_Z] - [-1\phi_\ell + 2\phi_Z]) \\
A'_{91} &= |A_1|^2 [Re(T_{1,1,-1}^1)Re(T_{1,1,-1}^1) + Im(T_{1,1,-1}^1)Im(T_{1,1,-1}^1)] \\
\omega_{91} &= 2[(2*1+1)(2*1+1)d_{-1,0}^1 * d_{-1,0}^1 * d_{1,1}^1 * d_{1,1}^1] \\
A'_{92} &= |A_1|^2 [Re(T_{1,1,-1}^1)Re(T_{1,1,0}^0) + Im(T_{1,1,-1}^1)Im(T_{1,1,0}^0)] \\
\omega_{92} &= [(2*1+1)(2*0+1)d_{-1,0}^1 * d_{0,0}^0 * d_{1,1}^1 * d_{1,1}^1] * \cos([-1\phi_\ell + 0\phi_Z] - [-1\phi_\ell + 1\phi_Z]) \\
A'_{93} &= |A_1|^2 [Re(T_{1,1,-1}^1)Re(T_{0,1,0}^1) + Im(T_{1,1,-1}^1)Im(T_{0,1,0}^1)] \\
\omega_{93} &= [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{0,-1}^1 * d_{1,1}^1 * d_{0,1}^1] * \cos([-1\phi_\ell + 0\phi_Z] - [0\phi_\ell + 0\phi_Z]) \\
A'_{94} &= |A_1|^2 [Re(T_{1,1,-1}^1)Re(T_{1,1,0}^1) + Im(T_{1,1,-1}^1)Im(T_{1,1,0}^1)] \\
\omega_{94} &= [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{0,0}^1 * d_{1,1}^1 * d_{1,1}^1] * \cos([-1\phi_\ell + 0\phi_Z] - [-1\phi_\ell + 1\phi_Z]) \\
A'_{95} &= |A_1|^2 [Re(T_{1,1,-1}^1)Re(T_{0,1,1}^1) + Im(T_{1,1,-1}^1)Im(T_{0,1,1}^1)] \\
\omega_{95} &= [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{1,-1}^1 * d_{1,1}^1 * d_{0,1}^1] * \cos([-1\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{96} &= |A_1|^2 [Re(T_{1,1,-1}^1)Re(T_{1,1,1}^1) + Im(T_{1,1,-1}^1)Im(T_{1,1,1}^1)] \\
\omega_{96} &= [(2*1+1)(2*1+1)d_{-1,0}^1 * d_{1,0}^1 * d_{1,1}^1 * d_{1,1}^1] * \cos([-1\phi_\ell + 0\phi_Z] - [-1\phi_\ell + 2\phi_Z]) \\
A'_{97} &= |A_1|^2 [Re(T_{1,1,0}^0)Re(T_{1,1,0}^0) + Im(T_{1,1,0}^0)Im(T_{1,1,0}^0)] \\
\omega_{97} &= 2[(2*0+1)(2*0+1)d_{0,0}^0 * d_{0,0}^0 * d_{1,1}^1 * d_{1,1}^1] \\
A'_{98} &= |A_1|^2 [Re(T_{1,1,0}^0)Re(T_{0,1,0}^1) + Im(T_{1,1,0}^0)Im(T_{0,1,0}^1)] \\
\omega_{98} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{0,-1}^1 * d_{1,1}^1 * d_{0,1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [0\phi_\ell + 0\phi_Z]) \\
A'_{99} &= |A_1|^2 [Re(T_{1,1,0}^0)Re(T_{1,1,0}^1) + Im(T_{1,1,0}^0)Im(T_{1,1,0}^1)] \\
\omega_{99} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{0,0}^1 * d_{1,1}^1 * d_{1,1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [-1\phi_\ell + 1\phi_Z]) \\
A'_{100} &= |A_1|^2 [Re(T_{1,1,0}^0)Re(T_{0,1,1}^1) + Im(T_{1,1,0}^0)Im(T_{0,1,1}^1)] \\
\omega_{100} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{1,-1}^1 * d_{1,1}^1 * d_{0,1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{101} &= |A_1|^2 [Re(T_{1,1,0}^0)Re(T_{1,1,1}^1) + Im(T_{1,1,0}^0)Im(T_{1,1,1}^1)] \\
\omega_{101} &= [(2*0+1)(2*1+1)d_{0,0}^0 * d_{1,0}^1 * d_{1,1}^1 * d_{1,1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [-1\phi_\ell + 2\phi_Z])
\end{aligned}$$

$$\begin{aligned}
A'_{102} &= |A_1|^2 [Re(T_{0,1,0}^1)Re(T_{0,1,0}^1) + Im(T_{0,1,0}^1)Im(T_{0,1,0}^1)] \\
\omega_{102} &= 2[(2*1+1)(2*1+1)d_{0,-1}^1 * d_{0,-1}^1 * d_{0,1}^1 * d_{0,1}^1] \\
A'_{103} &= |A_1|^2 [Re(T_{0,1,0}^1)Re(T_{1,1,0}^1) + Im(T_{0,1,0}^1)Im(T_{1,1,0}^1)] \\
\omega_{103} &= [(2*1+1)(2*1+1)d_{0,-1}^1 * d_{0,0}^1 * d_{0,1}^1 * d_{1,1}^1] * \cos([0\phi_\ell + 0\phi_Z] - [-1\phi_\ell + 1\phi_Z]) \\
A'_{104} &= |A_1|^2 [Re(T_{0,1,0}^1)Re(T_{0,1,1}^1) + Im(T_{0,1,0}^1)Im(T_{0,1,1}^1)] \\
\omega_{104} &= [(2*1+1)(2*1+1)d_{0,-1}^1 * d_{1,-1}^1 * d_{0,1}^1 * d_{0,1}^1] * \cos([0\phi_\ell + 0\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{105} &= |A_1|^2 [Re(T_{0,1,0}^1)Re(T_{1,1,1}^1) + Im(T_{0,1,0}^1)Im(T_{1,1,1}^1)] \\
\omega_{105} &= [(2*1+1)(2*1+1)d_{0,-1}^1 * d_{1,0}^1 * d_{0,1}^1 * d_{1,1}^1] * \cos([0\phi_\ell + 0\phi_Z] - [-1\phi_\ell + 2\phi_Z]) \\
A'_{106} &= |A_1|^2 [Re(T_{1,1,0}^1)Re(T_{1,1,0}^1) + Im(T_{1,1,0}^1)Im(T_{1,1,0}^1)] \\
\omega_{106} &= 2[(2*1+1)(2*1+1)d_{0,0}^1 * d_{0,0}^1 * d_{1,1}^1 * d_{1,1}^1] \\
A'_{107} &= |A_1|^2 [Re(T_{1,1,0}^1)Re(T_{0,1,1}^1) + Im(T_{1,1,0}^1)Im(T_{0,1,1}^1)] \\
\omega_{107} &= [(2*1+1)(2*1+1)d_{0,0}^1 * d_{1,-1}^1 * d_{1,1}^1 * d_{0,1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [0\phi_\ell + 1\phi_Z]) \\
A'_{108} &= |A_1|^2 [Re(T_{1,1,0}^1)Re(T_{1,1,1}^1) + Im(T_{1,1,0}^1)Im(T_{1,1,1}^1)] \\
\omega_{108} &= [(2*1+1)(2*1+1)d_{0,0}^1 * d_{1,0}^1 * d_{1,1}^1 * d_{1,1}^1] * \cos([-1\phi_\ell + 1\phi_Z] - [-1\phi_\ell + 2\phi_Z]) \\
A'_{109} &= |A_1|^2 [Re(T_{0,1,1}^1)Re(T_{0,1,1}^1) + Im(T_{0,1,1}^1)Im(T_{0,1,1}^1)] \\
\omega_{109} &= 2[(2*1+1)(2*1+1)d_{1,-1}^1 * d_{1,-1}^1 * d_{0,1}^1 * d_{0,1}^1] \\
A'_{110} &= |A_1|^2 [Re(T_{0,1,1}^1)Re(T_{1,1,1}^1) + Im(T_{0,1,1}^1)Im(T_{1,1,1}^1)] \\
\omega_{110} &= [(2*1+1)(2*1+1)d_{1,-1}^1 * d_{1,0}^1 * d_{0,1}^1 * d_{1,1}^1] * \cos([0\phi_\ell + 1\phi_Z] - [-1\phi_\ell + 2\phi_Z]) \\
A'_{111} &= |A_1|^2 [Re(T_{1,1,1}^1)Re(T_{1,1,1}^1) + Im(T_{1,1,1}^1)Im(T_{1,1,1}^1)] \\
\omega_{111} &= 2[(2*1+1)(2*1+1)d_{1,0}^1 * d_{1,1}^1 * d_{1,1}^1]
\end{aligned}$$